

**PERSPECTIVES FROM THE WEARABLE ELECTRONICS AND APPLICATIONS RESEARCH (WEAR) LAB, NASA
JOHNSON SPACE CENTER**

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As NASA moves beyond exploring low earth orbit and into deep space exploration, increased communication delays between astronauts and earth drive a need for crew to become more autonomous (earth-independent). Currently crew on board the International Space Station (ISS) have limited insight into specific vehicle system performance because of the dependency on monitoring and real-time communication with Mission Control. Wearable technology provides a method to bridge the gap between the human (astronaut) and the system (spacecraft) by providing mutual monitoring between the two. For example, vehicle or environmental information can be delivered to astronauts through on-body devices and in return wearables provide data to the spacecraft regarding crew health, location, etc.

The Wearable Electronics and Applications Research (WEAR) Lab at the NASA Johnson Space Center utilizes a collaborative approach between engineering and human factors to investigate the use of wearables for spaceflight. Zero and partial gravity environments present unique challenges to wearables that require collaborative, user-centered, and iterative approaches to the problems. Examples of the WEAR Lab's recent wearable projects for spaceflight will be discussed.